

REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

With regard to the copies of references in the Information Disclosure Statement filed December 11, 2000 indicated by the Examiner as not received, a copy of the stamped post card receipt for the Information Disclosure Statement is enclosed which indicates receipt by the Patent and Trademark Office of four documents. Additional copies of these documents are enclosed herewith. It is respectfully requested that the Examiner consider the references listed in the Information Disclosure Statement of December 11, 2000.

To place the subject application in better form, the specification has been amended to correct minor informalities. Also, a new abstract is presented in accordance with preferred practice. No new matter has been added by these changes.

It is proposed that Fig. 7 of the drawings be amended to change "EVACUAT CHAMBER AND LHB" to "EVACUATE CHAMBER AND LHB" to correct a typographical error. The proposed change is shown indicated in red in the enclosed drawing sheet. Approval of the change is respectfully requested.

Claims 1-20, 22-25 and 27-31 are presented for consideration. Claims 1, 9, 12, 14, 16, 24 and 30 are independent. Claims 21 and 26 have been canceled without prejudice or disclaimer. Claims 1, 3, 5-7, 9, 10, 12, 16, 18, 20, 22, 24, 25, 27 and 29-31 have been amended to clarify features of the subject invention. Support for these changes can be found in the original application, as filed. Therefore, no new matter has been added.

Applicant requests favorable reconsideration and withdrawal of the objection and rejections set forth in the above-noted Office Action.

Claims 1-31 have been rejected under 35 U.S.C. § 112, first paragraph in that the specification, while being enabling for substituting nitrogen and helium in an x-ray lithography exposure chamber does not reasonably provide enablement for gases in any environment as claimed. With regard to the claims as currently amended, this rejection is respectfully traversed.

The specification at lines 10 through 12 of page 8 clearly discloses "Further, the exposure apparatus is an exposure apparatus employing an F2 laser beam as an exposure beam". Accordingly, it is believed that the claimed invention is directed to an exposure apparatus that employs an X-ray beam or F2 beam as disclosed at lines 8-12 of page 8. In this regard, Claim 1 has been amended to clarify that the positioning apparatus is positioning apparatus of an exposure apparatus which is an X-ray exposure apparatus or an F2 laser beam exposure apparatus as disclosed at page 8 in the specification. Claim 9 has been similarly amended. It is therefore believed that the claims as currently amended fully meet the requirements of 35 U.S.C. § 112, first paragraph and that Claims 6, 9-11, 14, 15 and 27-31 are allowable.

Claims 1-5, 7, 8, 12, 13, 16-20 and 22-25 have been rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,616,898 to Hara et al. With regard to the claims as currently amended, this rejection is respectfully traversed.

Independent Claim 1 as currently amended is directed to a positioning apparatus of an exposure apparatus. In the positioning apparatus, a substituting unit substitutes a gas in a chamber from a first gas to a second gas. A static pressure gas bearing is provided in the

chamber and a gas supply unit supplies the second gas to the static pressure gas bearing. A control unit controls the gas supply unit to supply the second gas to the static pressure gas bearing when the substituting unit substitutes the gas in the chamber from the first gas to the second gas. A bearing exhaust unit exhausts the gas from the static pressure gas bearing.

Independent Claim 12 as currently amended is directed to an exposure apparatus in which a positioning apparatus is provided in a chamber to position a substrate. A substituting unit substitutes a second gas for a first gas in the chamber and a static pressure gas bearing is used to support the positioning apparatus. A gas supply unit supplies a working gas to the static pressure gas bearing. A control unit controls the gas supply unit to supply the second gas to the static pressure gas bearing when substituting the gas in the chamber from the first gas to the second gas. A bearing exhaust unit exhausts the gas of the static pressure gas bearing.

In Applicant's view, Hara et al. discloses a processing apparatus that has a sealed vacuum chamber which contains a processing portion. A pressure controlling system keeps the internal pressure of the sealed vacuum chamber constant at a predetermined level by exhausting the ambient gas in the sealed vacuum chamber. An ambient gas recirculating system recirculates the ambient gas exhausted from the sealed vacuum chamber back into the sealed vacuum chamber. The ambient gas recirculated by the ambient gas recirculating system is blown into the sealed vacuum chamber so that a gas flow is generated in a predetermined direction along the processing portion.

According to the invention defined in Claims 1 and 12, a bearing exhaust unit exhausts the gas of a static pressure gas bearing. Hara et al. may teach plural static pressure bearings 10

for a substrate positioning stage. The Hara et al. disclosure, however, is devoid of disclosure with respect to a bearing exhaust unit that exhausts the gas of a static pressure gas bearing as in Claims 1 and 12. As clearly disclosed at lines 60-66 of column 22 and lines 5 through 14 of column 28 of Hara et al. with respect to Figs. 5 and 9, "As for the high pressure gas for the static pressure bearings 10 for the substrate positioning stage, mask holding apparatus, and the like, the gas suctioned out from the vacuum chamber 1 into the recirculatory supply line 12 by the vacuum pump 20 is supplied to the static pressure bearings 10 through a high pressure gas supply line 13 which branches from the recirculatory supply line 12." without mention of any bearing exhaust unit. Accordingly, it is not seen that Hara et al. which fails to show or suggest anything regarding a bearing exhaust unit could teach or suggest the feature of Claims 1 and 12 of a bearing exhaust unit that exhausts gas of a static pressure gas bearing. It is therefore believed that Claims 1 and 12 as currently amended are completely distinguished from Hara et al. and are allowable.

Independent Claim 16 as currently amended is directed to an atmosphere substituting method in which a gas is substituted in a chamber from a first gas to a second gas in a substituting step. During the substituting step, the first gas of the static pressure gas bearing is exhausted in a bearing exhaust step. The second gas is supplied to the static pressure gas bearing with the gas supply unit in a gas supply step.

Independent Claim 24 as currently amended is directed to a device manufacturing method in which a gas in a chamber incorporating a positioning apparatus using a static pressure gas bearing is substituted from a first gas to a second gas in a substituting step. A target exposure

substrate is positioned with the positioning apparatus and a predetermined pattern is exposed after the substituting step. According to the method, the first gas of the static pressure gas bearing is exhausted during the substituting step in a bearing exhaust step. The second gas is supplied to the static pressure gas bearing with the gas supply unit in a gas supply step.

It is a feature of Claims 16 and 24 that in the substituting of a gas from a first gas to a second gas in a chamber having a positioning apparatus, the first gas of a static pressure gas bearing is exhausted in a bearing exhaust step during the substituting. As discussed with respect to Claims 1 and 12, Hara et al. only provides a high pressure supply line 13 to branching from a recirculatory supply line 12 to supply gas to static pressure bearings 10 in Figs. 5 and 9 but fails to disclose any bearing exhaust step of exhausting of a first gas of a static pressure gas bearing as in Claims 16 and 24. It is therefore not seen that Hara et al. in any manner could suggest the feature of a bearing exhaust step of exhausting the first gas of a static pressure gas bearing during a first to second gas substituting step as in Claims 16 and 24. Accordingly, it is believed that Claims 16 and 24 as currently amended are completely distinguished from Hara et al. and are allowable.

For the foregoing reasons, Applicant submits that the present invention, as recited in independent claims 1, 9, 12, 14, 16, 24 and 30, is patentably defined over the cited art.

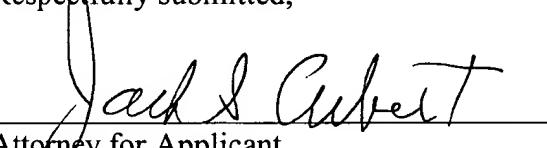
Dependent claims 2-8, 13, 15, 17-20, 22, 23, 25, 27-29 and 31 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in their respective independent claims. Further individual consideration of these dependent claims is requested.

Applicant further submits that the instant application is in condition for allowance.

Favorable reconsideration, withdrawal of the objection and rejections set forth in the above-noted Office Action and an early Notice of Allowance are requested.

Applicant's attorney, Steven E. Warner, may be reached in our Washington, D.C. office by telephone at (202) 530-1010 All correspondence should continue to be directed to our address given below.

Respectfully submitted,



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